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EXAMINER	
DIVECHA, KAMAL B	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/074,411	EASTVOLD, ROGER	
	Examiner	Art Unit	
	KAMAL DIVECHA	2451	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 July 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-35* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-35* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to communications filed 7/14/2011.

Claims 1-20, 22-29 and 31-35 are pending in this application.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/14/2011 has been entered.

Response to Arguments

Applicant's arguments filed in the submission above have been fully considered but they are not persuasive.

In the response filed, applicant argues in substance that:

a. The analysis provided by the Examiner completely ignores and fails to address that fact that Pyotsia expressly teaches against hiding the "Address" of the field devices 14-16 (remarks, pg. 12-16).

In response to argument [a], Examiner respectfully disagrees.

The claim merely recites "…wherein the remote network receives the second data **without an IP address of the predetermined semiconductor processing tool**…"

Pyotsia discloses using **a tag code to identify a field device on a web page**. Pyotsia does not disclose or suggest the fact that this tag code is equivalent to an IP address nor the tag is an IP address.

The tag code or identifier is used to identify the field device on a hierarchy or www page. As such, Pyotsia does not teach against or away from hiding the "IP address of the field devices 14-16.

Furthermore, the claim merely recites receiving data without the IP address of the tool. It fails to disclose whether the tools are assigned IP addresses to identify the tools in the network. As such, the tag or the code as in Pyotsia cannot be equated to IP address of the tool.

Moreover, Pyotsia does not criticize, discredit, or other wise discourage the usage of NAT device or functionality to hide the local IP addresses. See MPEP 2141.02 (VI) and In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004) [However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed ...."].

As such, modifying Pyotsia would not change the principal operation of Pyotsia since the tag or code can still be displayed on www page without revealing the IP address of the tool.

b. There is absolutely nothing in Kim that discloses the wartning message comes from a user on the remote network as recited in claim 1 (remarks, pg. 16-17).

In response to argument [b], Examiner respectfully disagrees.

Kim discloses a technique of sending a warning message to a distant computer device from a distal user, as acknowledged by the applicant, see remarks, pg. 16.

Therefore, it would have been obvious to a person of ordinary skilled in the art to modify Pyotsia and Reid in order to send a message from a remote user to a distal computer device.

The rationale supporting the combination can be found in KSR. See KSR International Co. v. Teleflex Inc., 550 U.S. ___,___, 82 USPQ2d 1385, 1395-97 (2007) identified a number of rationales to support a conclusion of obviousness which are consistent with the proper "functional approach" to the determination of obviousness as laid down in Graham. The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit, and **MPEP 2143.** [EXEMPLARY RATIONALES:

Exemplary rationales that may support a conclusion of obviousness include:
(A) Combining prior art elements according to known methods to yield predictable results;
(B) Simple substitution of one known element for another to obtain predictable results;
(C) Use of known technique to improve similar devices (methods, or products) in the same way;
(D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
(E) "Obvious to try" – choosing from a finite number of identified, predictable;
(F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;
(G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. See MPEP § 2143 for a discussion of the rationales listed above along with examples illustrating how the cited rationales may be used to support a finding of obviousness].

c. Claim 6 recites "conveyance of the active and passive requests from the user depends on the status of an operation of the at least one processing tool at a time of the

active or passive request". This feature is simply not disclosed or suggested by the combination of Pyotsia, Reid and Kim (remarks, pg. 17).

In response to applicant argument [c], Examiner respectfully disagrees.

Pyotsia discloses that the **mobile terminal MT is able to browse the diagnostic and configuration data in the device database 22 by means of the interactive WWW pages**. **In response to the requests and selections made by the user in the interactive WWW pages** the WWW server 23 makes inquiries to the device database 22, and a new WWW page is created according to the data obtained from the database 22. **The created WWW page may include diagnostic data, status and an operation history data of the selected field device, as well as information required for controlling and configuring the field device**. According to the user's selections an appropriate piece of data is shown in the WWW page in text format, graphical format and/or in any other suitable format, together with the fields or links for making further selections or commands. **The server 23 or 33 translates the configuration or control commands made by the user in the interactive WWW page into configuration commands used in the interface between the WWW server 23 or 33 and the diagnostic system 21, typically based on the information obtained from the database 22.**

As such, Pyotsia does disclose this feature.

For the at least these reasons, the rejection is maintained.

35 USC § 112, Sixth Interpretation

Claim 1 recites "…the local network is configured to…"; claim 6 recites "...module being configured to..."; claim 11 recites "...equipment diagnostic monitor systems for...", "the

intermediate network is configured to…"; claim 24 recites "…an equipment diagnostic monitor system configured to…".

These limitations does not invoke the 35 USC 112, sixth paragraph, and are not interpreted under the provisions of the 35 USC 112, sixth since "the module", monitor systems and networks comprises hardware devices.

For more information, see *Supplementary Examination Guidelines for Determining Compliance with 35 U.S.C. § 112 and for Treatment of Related Issues in Patent Applications*, 76 FR 7162, 7167 (Feb. 9, 2011).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-20, 23-29 and 31-35 are rejected under 35 U.S.C. 103(a) as being Pyotsia et al. (hereinafter Pyotsia, US 7,010,294 B1) in view of Reid et al. (hereinafter Reid, US 6,182,226 B1) and further in view of Kim et al. (hereinafter Kim, US 6,314,385 B1).

Referring to claim 1,

Pyotsia teaches a system for accessing data remotely from a network (Fig. 2), comprising:

a local network interface permitting data transfer between a local network (please refer to col. 5, line 19-26, "With reference to FIG. 2, **a diagnostic system 21** may be any automation system, such as automation system 11 and 12 in FIG. 1, or any field device management or control system, such as the management system 10 in FIG. 1, or combination thereof." **Note: Fig. 1, element 10 which is element 21 of Fig. 2 is an "a local network interface" permitting data transfer from a local network "which is Fig. 2, element "Hart/Field bus and "field devices.")** and an intermediate network (Fig. 1, element "Factory LAN" and including Fig. 2, elements 21 and 23 is "an intermediate network ", please refer to col. 5, line 19-26, "With reference to FIG. 2, **a diagnostic system 21** may be any automation system, such as automation system 11 and 12 in FIG. 1, or any field device management or control system, such as the management system 10 in FIG. 1, or combination thereof. A characteristic feature of the diagnostic system is that it comprises a wired connection, such as a field bus or a HART bus, to field devices 14, 15 and 16, and is able to control or configure the field devices, or to read measurement or status data from the field devices." **note: Thus, "the management system 10" is a diagnostic system 21 of Fig. 2 interfacing the Factory LAN" of Fig. 1.)** (Fig. 2, element 21's interface showing OLE and "data" going into element 23) Fi.2, element 23);

a remote network interface device (Fig. 2, element 23) permitting data transfer between the intermediate network and a remote network (Fig. 2, element 24, 25, 26, col. 6, line 3-41); and

a module located within the intermediate network, through which data transferring between the local network and the remote network passes, the module being configured to receive and process a first data from the remote network and send a different data to the local network based on the first data received from the remote network, the module being configured

to monitor the predetermined equipment substantially independent of input from the remote network. (col. 6, line 63-col. 7, line 67, "FIG. 3 illustrates the wireless control arrangement according to the present invention when using the WAP. The diagnostic system 21, device database 22 as well as the WWW server 33 may be similar to those described with reference to FIG. 2. As the configuration and control commands will affect on the operation of the plant, a system according to the invention has to assure that the user is an authorized user. **It may also be possible to create a WWW server 33 that includes the WAP gateway functionality 35,** in order to facilitate end-to-end security solutions, or to achieve better access control or a guarantee of responsiveness. The WWW server 23 and 33 utilizes the data in the device database 22 for creating the interactive WWW pages for browsing the data and for control and configuration of the field devices. As the server 23 or 33 uses the same database with the diagnostic system 21, the contents of the WWW pages are always up-to-date. The mobile terminal MT is able to browse the diagnostic and configuration data in the device database 22 by means of the interactive WWW pages. In response to the requests and selections made by the user in the interactive WWW pages the WWW server 23 makes inquiries to the device database 22, and a new WWW page is created according to the data obtained from the database 22. The created WWW page may include diagnostic data, status and an operation history data of the selected field device, as well as information required for controlling and configuring the field device. According to the user's selections an appropriate piece of data is shown in the WWW page in text format, graphical format and/or in any other suitable format, together with the fields or links for making further selections or commands. The server 23 or 33 translates the configuration or control commands made by the user in the interactive WWW page into configuration commands

used in the interface between the WWW server 23 or 33 and the diagnostic system 21, typically based on the information obtained from the database 22. The interface between the server 23 and the diagnostic system 21 may be OLE (Object Linking and Embedding) The diagnostic system 21 forwards the control and configuration commands received from the server 23 or 33 to the field devices, typically upon translating the generic commands into the device specific instructions. As a result, an "on-line" connection from the mobile terminal MT to the field device is provided.")and to transmit a second data from the intermediate network to the remote network where the second data is related to a predetermined condition of predetermined equipment identified by the module (col. 8, line 1-22, "By means of the inventive interactive user interface and the "on-line" connection, the maintenance personnel is able to retrieve information on the operation of a desired field device, such as a control valve, and display it on the user interface of the mobile terminal. The information may be displayed in a text format and/or graphical format. The information may also include alarms and any operation parameters which the maintenance person wishes to monitor on-line, such as the opening of a valve. The operational data obtained by the mobile terminal MT allows the maintenance person to immediately make a decision on the maintenance need of the respective field device, i.e. whether it is possible to postpone the maintenance operation up to the next shut down of the plant or whether special arrangements are needed in order to avoid an unintentional shutdown. During the shutdown of the plant the mobile terminal can be used for performing various field test for the field device, such as a step response test or a hystheresis test for a control valve. Also during the operation of the plant the diagnostic system 21 may allow the mobile terminal to perform a forced control of the field device to a desired mode of operation or position.")

Pyotsia fails to teach "wherein the remote network receives the second data without an identity of the predetermined equipment associated with the second data being known to the remote network".

Reid teaches "A rewrite node is a point in an access rule where source or destination addresses are mapped to other source or destination addresses. Destination IP address rewrites allow an inbound connection through network address translation (NAT) address hiding to be remapped to a destination inside the NAT barrier. Source address rewrites can be used on outbound connections to make the source appear to be one of many external addresses. This process allows the internal hosts to be aliased to external addresses. Rewrites can be based on any connection criteria, including users.", col. 6, lines 46-56. ("wherein the remote network receives the second data without an identity of the predetermined equipment associated with the second data being known to the remote network"

One of ordinary skill in the art could have substituted "WAP security of Pyotsia by known methods. For example, Pyotsia discloses security by WAP protocol and Reid discloses "Destination IP address rewrites allow an inbound connection through network address translation (NAT) address hiding to be remapped to a destination inside the NAT barrier" , and the results would have been a predictable use of known technique of providing security over the network . Thus, it would have been obvious to one of ordinary skill in the art to replace the WAP security with a network address translation (NAT)

It would have been obvious because it provides a method for controlling interactions between networks by the use of firewalls with defined regions as taught by Reid.

However, Pyotsia-Reid does not disclose the local network including at least one semiconductor processing tool and semiconductor processing tool monitoring equipment and wherein the local network is configured to receive and display a suggestion at the predetermined semiconductor processing tool, from a user on the remote network regarding the operation of the predetermined semiconductor processing tool being monitored on the local network.

Kim discloses a local network comprising at least semiconductor processing tool and semiconductor processing tool monitoring equipment and wherein the local network is configured to receive and display a suggestion at the predetermined semiconductor processing tool, from a user on the remote network regarding the operation of the predetermined semiconductor processing tool being monitored on the local network (fig. 1: equipment 20, 30, 40, fig. 2 step #s120, s160, col. 2 L5-42, col. 2 L60 to col. 3 L61: downloading warning message into the equipment to be displayed on the display device of the equipment).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Pyotsia-Reid in view of Kim in order to monitor the semiconductor devices and display a suggestion at the predetermined semiconductor device received from a user on the remote network.

One of ordinary skilled in the art would have been motivated because it would have monitored the network of semiconductor devices.

Referring to claim 2,

Pyotsia-Reid-Kim teaches the system of claim 1, wherein the data transfer between each of the networks occurs via the Internet Protocol (IP), and wherein each network has its own unique IP address (Fig. 2, elements 26, 24 25 and 23 are located in the internet environment.).

Referring to claim 3,

Keeping in mine the teachings of Pyotsia as stated above, Pyotsia explicitly fails to teach the system of claim 2, wherein the module hides the IP addresses of the remote network and the local network from each other.

Reid teaches "A rewrite node is a point in an access rule where source or destination addresses are mapped to other source or destination addresses. Destination IP address rewrites allow an inbound connection through network address translation (NAT) address hiding to be remapped to a destination inside the NAT barrier. Source address rewrites can be used on outbound connections to make the source appear to be one of many external addresses. This process allows the internal hosts to be aliased to external addresses. Rewrites can be based on any connection criteria, including users.", col. 6, lines 46-56. (wherein the data transfer between each of the networks occurs via the Internet Protocol (IP), and wherein each network has its own unique IP address, and the system of claim 2, wherein the module hides the IP addresses of the remote network and the local network from each other.)

One of ordinary skill in the art could have substituted "WAP security of Pyotsia by known methods. For example, Pyotsia discloses security by WAP protocol and Reid discloses "Destination IP address rewrites allow an inbound connection through network address translation (NAT) address hiding to be remapped to a destination inside the NAT barrier" , and the results would have been a predictable use of known technique of providing security over the network . Thus, it would have been obvious to one of ordinary skill in the art to replace the WAP security with a network address translation (NAT)

It would have been obvious because it provides a method for controlling interactions between networks by the use of firewalls with defined regions as taught by Reid.

Referring to claim 4,

Pyotsia-Reid-Kim teaches the system of claim 2, wherein the module exchanges data with an equipment diagnostic monitor system located within the intermediate network, the equipment diagnostic monitoring system being configured to monitor a health of the equipment within the local network and wherein the equipment diagnostic monitor system has the function of monitoring at least one activity of at least one tool residing within the local network (col. 6, line 63-col. 7, line 67, "FIG. 3 illustrates the wireless control arrangement according to the present invention when using the WAP. The diagnostic system 21, device database 22 as well as the WWW server 33 may be similar to those described with reference to FIG. 2. As the configuration and control commands will affect on the operation of the plant, a system according to the invention has to assure that the user is an authorized user. It may also be possible to create a WWW server 33 that includes the WAP gateway functionality 35, in order to facilitate end-to-end security solutions, or to achieve better access control or a guarantee of responsiveness. The WWW server 23 and 33 utilizes the data in the device database 22 for creating the interactive WWW pages for browsing the data and for control and configuration of the field devices. As the server 23 or 33 uses the same database with the diagnostic system 21, the contents of the WWW pages are always up-to-date. The mobile terminal MT is able to browse the diagnostic and configuration data in the device database 22 by means of the interactive WWW pages. In response to the requests and selections made by the user in the interactive WWW pages the WWW server 23 makes inquiries to the device database 22, and a new WWW page is created

according to the data obtained from the database 22. The created WWW page may include diagnostic data, status and an operation history data of the selected field device, as well as information required for controlling and configuring the field device. According to the user's selections an appropriate piece of data is shown in the WWW page in text format, graphical format and/or in any other suitable format, together with the fields or links for making further selections or commands. The server 23 or 33 translates the configuration or control commands made by the user in the interactive WWW page into configuration commands used in the interface between the WWW server 23 or 33 and the diagnostic system 21, typically based on the information obtained from the database 22. The interface between the server 23 and the diagnostic system 21 may be OLE (Object Linking and Embedding) The diagnostic system 21 forwards the control and configuration commands received from the server 23 or 33 to the field devices, typically upon translating the generic commands into the device specific instructions. As a result, an "on-line" connection from the mobile terminal MT to the field device is provided.", col. 8, line 1-22, "By means of the inventive interactive user interface and the "on-line" connection, the maintenance personnel is able to retrieve information on the operation of a desired field device, such as a control valve, and display it on the user interface of the mobile terminal. The information may be displayed in a text format and/or graphical format. The information may also include alarms and any operation parameters which the maintenance person wishes to monitor on-line, such as the opening of a valve. The operational data obtained by the mobile terminal MT allows the maintenance person to immediately make a decision on the maintenance need of the respective field device, i.e. whether it is possible to postpone the maintenance operation up to the next shut down of the plant or whether special arrangements are

needed in order to avoid an unintentional shutdown. During the shutdown of the plant the mobile terminal can be used for performing various field test for the field device, such as a step response test or a hystheresis test for a control valve. Also during the operation of the plant the diagnostic system 21 may allow the mobile terminal to perform a forced control of the field device to a desired mode of operation or position.").

Referring to claim 5,

Pyotsia-Reid-Kim teaches the system of claim 4, wherein the equipment diagnostic monitor system collects and analyzes data from tests performed on the at least one tool. (col. 8, line 1-22, "By means of the inventive interactive user interface and the "on-line" connection, the maintenance personnel is able to retrieve information on the operation of a desired field device, such as a control valve, and display it on the user interface of the mobile terminal. The information may be displayed in a text format and/or graphical format. The information may also include alarms and any operation parameters which the maintenance person wishes to monitor on-line, such as the opening of a valve. The operational data obtained by the mobile terminal MT allows the maintenance person to immediately make a decision on the maintenance need of the respective field device, i.e. whether it is possible to postpone the maintenance operation up to the next shut down of the plant or whether special arrangements are needed in order to avoid an unintentional shutdown. During the shutdown of the plant the mobile terminal can be used for performing various field test for the field device, such as a step response test or a hystheresis test for a control valve. Also during the operation of the plant the diagnostic system 21 may allow the mobile terminal to perform a forced control of the field device to a desired mode of operation or position." Col. 5, line 27-53, "For this purpose, the diagnostic system 21

comprises a management and control software for the field devices. In the preferred embodiment each field device type (e.g. two different control valves or control valves of different manufacturers may represent different device types) is provided with a specific control software which contains all necessary data and instructions sets for controlling, configuring, reading, etc., the field devices of a predetermined time. Normally these operations can be made by a control room personnel from a work station. A device database 22 stores information on each field device controlled by the diagnostic system 21 and, preferably, all diagnostics data read from the field devices. In other words, the database 22 contains an updated configuration of field devices as well as the operation history thereof. In accordance to the principles of the present invention, the diagnostic system 21 is further provided with an interactive user interface which utilize the configuration, control and management data in the database 22 and is accessible by the mobile terminal MT through a dedicated data connection established over the cellular communication system 26, in order to selectively control, configure or monitor the field devices 14, 15 and 16 connected to the diagnostic system 21. In the preferred embodiment of the invention the interactive user interface is embodied as one or more world wide web (WWW) pages in a WWW server 23.").

Referring to claim 6,

Pyotsia teaches a system for accessing a local network from a remote network through an intermediate network(Fig. 2), comprising:

a local network interface permitting data transfer between the local network (please refer to col. 5, line 19-26, "With reference to FIG. 2, **a diagnostic system 21** may be any automation system, such as automation system 11 and 12 in FIG. 1, or any field device management or

control system, such as the management system 10 in FIG. 1, or combination thereof." **Note: Fig. 1, element 10 which is element 21 of Fig. 2 is an "a local network interface" permitting data transfer from a local network "which is Fig. 2, element "Hart/Field bus and "field devices.")** and the intermediate network (Fig. 1, element "Factory LAN" and including Fig. 2, elements 21 and 23 is "an intermediate network ", please refer to col. 5, line 19-26, "With reference to FIG. 2, **a diagnostic system 21** may be any automation system, such as automation system 11 and 12 in FIG. 1, or any field device management or control system, such as the management system 10 in FIG. 1, or combination thereof. A characteristic feature of the diagnostic system is that it comprises a wired connection, such as a field bus or a HART bus, to field devices 14, 15 and 16, and is able to control or configure the field devices, or to read measurement or status data from the field devices." **note: Thus, "the management system 10" is a diagnostic system 21 of Fig. 2 interfacing the Factory LAN" of Fig. 1.)** (Fig. 2, element 21's interface showing OLE and "data" going into element 23) Fi.2 ,element 23) , the local network having a plurality of equipment located within the local network (please refer to col. 5, line 19-26, "With reference to FIG. 2, **a diagnostic system 21** may be any automation system, such as automation system 11 and 12 in FIG. 1, or any field device management or control system, such as the management system 10 in FIG. 1, or combination thereof." **Note: Fig. 1, element 10 which is element 21 of Fig. 2 is an "a local network interface" permitting data transfer from a local network "which is Fig. 2, element "Hart/Field bus and "field devices.")**;

a remote network interface permitting data transfer between the remote network (Fig. 2, element 23) and the intermediate network, the remote network having the user located within the

remote network; and permitting data transfer between the intermediate network and a remote network (Fig. 2, element 24, 25, 26, col. 6, line 3-41); and

a module located within the intermediate network, the module being configured to receive and process data from at least one of the plurality of users of the remote network and send a different data to at least one of the plurality of equipment of the local network based on the data received from the remote network, the module being further configured to allow one of the plurality of users to select at least one equipment diagnostic monitor system from a plurality of equipment diagnostic monitoring systems; and the equipment diagnostic monitor system for monitoring the health of the plurality of equipment within the local network, the equipment diagnostic monitoring system being located within the intermediate network, wherein the equipment diagnostic monitor system monitors tests performed on the plurality of equipment residing within the local network, wherein the module is configured to convey test data related to the plurality of semiconductor processing tools, to users on the remote network, wherein the module is configured to convey both the active requests and passive requests from a user on the remote network to at least one of the plurality of semiconductor processing tools of the local network where the conveyance of the active and passive requests depends at least partly on a status of an operation of the at least one of the plurality of semiconductor processing tools at a time of the active or passive requests (col. 6, line 63-col. 7, line 67, "FIG. 3 illustrates the wireless control arrangement according to the present invention when using the WAP. The diagnostic system 21, device database 22 as well as the WWW server 33 may be similar to those described with reference to FIG. 2. It may also be possible to create a WWW server 33 that includes the WAP gateway functionality 35, in order to facilitate end-to-end security solutions,

or to achieve better access control or a guarantee of responsiveness. The WWW server 23 and 33 utilizes the data in the device database 22 for creating the interactive WWW pages for browsing the data and for control and configuration of the field devices. As the server 23 or 33 uses the same database with the diagnostic system 21, the contents of the WWW pages are always up-to-date. **The mobile terminal MT is able to browse the diagnostic and configuration data in the device database 22 by means of the interactive WWW pages**. **In response to the requests and selections made by the user in the interactive WWW pages** the WWW server 23 makes inquiries to the device database 22, and a new WWW page is created according to the data obtained from the database 22. **The created WWW page may include diagnostic data, status and an operation history data of the selected field device, as well as information required for controlling and configuring the field device**. According to the user's selections an appropriate piece of data is shown in the WWW page in text format, graphical format and/or in any other suitable format, together with the fields or links for making further selections or commands. **The server 23 or 33 translates the configuration or control commands made by the user in the interactive WWW page into configuration commands used in the interface between the WWW server 23 or 33 and the diagnostic system 21, typically based on the information obtained from the database 22.** The interface between the server 23 and the diagnostic system 21 may be OLE (Object Linking and Embedding) The diagnostic system 21 forwards the control and configuration commands received from the server 23 or 33 to the field devices, typically upon translating the generic commands into the device specific instructions. As a result, an "on-line" connection from the mobile terminal MT to the field device is provided." col. 8, line 1-22, "By means of the inventive interactive user interface and the "on-

line" connection, the maintenance personnel is able to retrieve information on the operation of a desired field device, such as a control valve, and display it on the user interface of the mobile terminal. The information may be displayed in a text format and/or graphical format. The information may also include alarms and any operation parameters which the maintenance person wishes to monitor on-line, such as the opening of a valve. The operational data obtained by the mobile terminal MT allows the maintenance person to immediately make a decision on the maintenance need of the respective field device, i.e. whether it is possible to postpone the maintenance operation up to the next shut down of the plant or whether special arrangements are needed in order to avoid an unintentional shutdown. During the shutdown of the plant the mobile terminal can be used for performing various field test for the field device, such as a step response test or a hystheresis test for a control valve. Also during the operation of the plant the diagnostic system 21 may allow the mobile terminal to perform a forced control of the field device to a desired mode of operation or position."), wherein the module is configured to convey both active requests and passive requests from a user on the remote network to at least one of the plurality of device of the local network (col. 6, line 63-col. 7, line 67, "FIG. 3 illustrates the wireless control arrangement according to the present invention when using the WAP. The diagnostic system 21, device database 22 as well as the WWW server 33 may be similar to those described with reference to FIG. 2, fig. 6, col. 5 L10-52: controlling the field device from the MT using the requests or commands).

Pyotsia fails to teach "a plurality of equipment diagnostic monitor system" and "wherein the remote network receives the second data without an IP address of the predetermined equipment associated with the second data being known to the remote network".

However, one of ordinary skill in the art could have used more than one (plurality) of Pyotsia's "Diagnostics systems" to monitor the devices in various LAN network segments independently and the results of such an extension of Pyotsia's invention would have been predictable in that the devices located at different segments of the LANs could be independently remotely controlled and monitored.

Reid teaches "A rewrite node is a point in an access rule where source or destination addresses are mapped to other source or destination addresses. Destination IP address rewrites allow an inbound connection through network address translation (NAT) address hiding to be remapped to a destination inside the NAT barrier. Source address rewrites can be used on outbound connections to make the source appear to be one of many external addresses. This process allows the internal hosts to be aliased to external addresses. Rewrites can be based on any connection criteria, including users.", col. 6, lines 46-56. ("wherein the remote network receives the second data without an identity of the predetermined equipment associated with the second data being known to the remote network"

One of ordinary skill in the art could have substituted "WAP security of Pyotsia by known methods. For example, Pyotsia discloses security by WAP protocol and Reid discloses "Destination IP address rewrites allow an inbound connection through network address translation (NAT) address hiding to be remapped to a destination inside the NAT barrier" , and the results would have been a predictable use of known technique of providing security over the network . Thus, it would have been obvious to one of ordinary skill in the art to replace the WAP security with a network address translation (NAT)

It would have been obvious because it provides a method for controlling interactions between networks by the use of firewalls with defined regions as taught by Reid.

However, Pyotsia-Reid does not disclose the local network including at least one semiconductor processing tool and semiconductor processing tool monitoring equipment.

Kim discloses a local network comprising at least semiconductor processing tool and semiconductor processing tool monitoring equipment (fig. 1: equipment 20, 30, 40, fig. 2 step #s120, s160, col. 2 L5-42, col. 2 L60 to col. 3 L61: downloading warning message into the equipment to be displayed on the display device of the equipment).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Pyotsia-Reid in view of Kim in order to monitor the semiconductor devices and display a suggestion at the predetermined semiconductor device received from a user on the remote network.

One of ordinary skilled in the art would have been motivated because it would have monitored the network of semiconductor devices.

Referring to claim 7,

Pyotsia-Reid-Kim teaches the system of claim 6, wherein the data transfer between each of the networks occurs via the Internet Protocol (IP) (Fig. 2, elements 26, 24 25 and 23 are located in the internet environment.).

Referring to claim 8,

Keeping in mine the teachings of Pyotsia as stated above, Pyotsia explicitly fails to teach to teach the system of claim 7, wherein the module hides the IP addresses of the local network and the remote network from each other.

Reid teaches "A rewrite node is a point in an access rule where source or destination addresses are mapped to other source or destination addresses. Destination IP address rewrites allow an inbound connection through network address translation (NAT) address hiding to be remapped to a destination inside the NAT barrier. Source address rewrites can be used on outbound connections to make the source appear to be one of many external addresses. This process allows the internal hosts to be aliased to external addresses. Rewrites can be based on any connection criteria, including users.", col. 6, lines 46-56. (wherein the data transfer between each of the networks occurs via the Internet Protocol (IP), and wherein each network has its own unique IP address, and the system of claim 2, wherein the module hides the IP addresses of the remote network and the local network from each other.)

One of ordinary skill in the art could have substituted "WAP security of Pyotsia by known methods. For example, Pyotsia discloses security by WAP protocol and Reid discloses "Destination IP address rewrites allow an inbound connection through network address translation (NAT) address hiding to be remapped to a destination inside the NAT barrier" , and the results would have been a predictable use of known technique of providing security over the network . Thus, it would have been obvious to one of ordinary skill in the art to replace the WAP security with a network address translation (NAT)

It would have been obvious because it provides a method for controlling interactions between networks by the use of firewalls with defined regions as taught by Reid.

Referring to claim 9,

Pyotsia-Reid-Kim teaches the system of claim 6, wherein the equipment diagnostic monitor system collects and analyzes data from the at least one activity of the at least one item

(col. 8, line 1-22, "By means of the inventive interactive user interface and the "on-line" connection, the maintenance personnel is able to retrieve information on the operation of a desired field device, such as a control valve, and display it on the user interface of the mobile terminal. The information may be displayed in a text format and/or graphical format. The information may also include alarms and any operation parameters which the maintenance person wishes to monitor on-line, such as the opening of a valve. The operational data obtained by the mobile terminal MT allows the maintenance person to immediately make a decision on the maintenance need of the respective field device, i.e. whether it is possible to postpone the maintenance operation up to the next shut down of the plant or whether special arrangements are needed in order to avoid an unintentional shutdown. During the shutdown of the plant the mobile terminal can be used for performing various field test for the field device, such as a step response test or a hystheresis test for a control valve. Also during the operation of the plant the diagnostic system 21 may allow the mobile terminal to perform a forced control of the field device to a desired mode of operation or position." Col. 5, line 27-53, "For this purpose, the diagnostic system 21 comprises a management and control software for the field devices. In the preferred embodiment each field device type (e.g. two different control valves or control valves of different manufacturers may represent different device types) is provided with a specific control software which contains all necessary data and instructions sets for controlling, configuring, reading, etc., the field devices of a predetermined time. Normally these operations can be made by a control room personnel from a work station. A device database 22 stores information on each field device controlled by the diagnostic system 21 and, preferably, all diagnostics data read from the field devices. In other words, the database 22 contains an updated

configuration of field devices as well as the operation history thereof. In accordance to the principles of the present invention, the diagnostic system 21 is further provided with an interactive user interface which utilize the configuration, control and management data in the database 22 and is accessible by the mobile terminal MT through a dedicated data connection established over the cellular communication system 26, in order to selectively control, configure or monitor the field devices 14, 15 and 16 connected to the diagnostic system 21. In the preferred embodiment of the invention the interactive user interface is embodied as one or more world wide web (WWW) pages in a WWW server 23.").

Referring to claim 10,

Pyotsia-Reid-Kim teaches the system of claim 6, wherein the user on the remote network may request that tests be performed on the at least one item, and may upload data to the remote network, from at least one test performed on the at least one item (col. 8, line 1-22, "By means of the inventive interactive user interface and the "on-line" connection, the maintenance personnel is able to retrieve information on the operation of a desired field device, such as a control valve, and display it on the user interface of the mobile terminal. The information may be displayed in a text format and/or graphical format. The information may also include alarms and any operation parameters which the maintenance person wishes to monitor on-line, such as the opening of a valve. The operational data obtained by the mobile terminal MT allows the maintenance person to immediately make a decision on the maintenance need of the respective field device, i.e. whether it is possible to postpone the maintenance operation up to the next shut down of the plant or whether special arrangements are needed in order to avoid an unintentional shutdown. During the shutdown of the plant the mobile terminal can be used for performing

various field test for the field device, such as a step response test or a hystheresis test for a control valve. Also during the operation of the plant the diagnostic system 21 may allow the mobile terminal to perform a forced control of the field device to a desired mode of operation or position." Col. 5, line 27-53, "For this purpose, the diagnostic system 21 comprises a management and control software for the field devices. In the preferred embodiment each field device type (e.g. two different control valves or control valves of different manufacturers may represent different device types) is provided with a specific control software which contains all necessary data and instructions sets for controlling, configuring, reading, etc., the field devices of a predetermined time. Normally these operations can be made by a control room personnel from a work station. A device database 22 stores information on each field device controlled by the diagnostic system 21 and, preferably, all diagnostics data read from the field devices. In other words, the database 22 contains an updated configuration of field devices as well as the operation history thereof. In accordance to the principles of the present invention, the diagnostic system 21 is further provided with an interactive user interface which utilize the configuration, control and management data in the database 22 and is accessible by the mobile terminal MT through a dedicated data connection established over the cellular communication system 26, in order to selectively control, configure or monitor the field devices 14, 15 and 16 connected to the diagnostic system 21. In the preferred embodiment of the invention the interactive user interface is embodied as one or more world wide web (WWW) pages in a WWW server 23.").

Referring to claim 11,

Pyotsia teaches the data system, comprising:

a local network interface device enabling data transfer between a local network (please refer to col. 5, line 19-26, "With reference to FIG. 2, **a diagnostic system 21** may be any automation system, such as automation system 11 and 12 in FIG. 1, or any field device management or control system, such as the management system 10 in FIG. 1, or combination thereof." **Note: Fig. 1, element 10 which is element 21 of Fig. 2 is an "a local network interface" permitting data transfer from a local network "which is Fig. 2, element "Hart/Field bus and "field devices.")** and an intermediate network(Fig. 1, element "Factory LAN" and including Fig. 2, elements 21 and 23 is "an intermediate network ", please refer to col. 5, line 19-26, "With reference to FIG. 2, **a diagnostic system 21** may be any automation system, such as automation system 11 and 12 in FIG. 1, or any field device management or control system, such as the management system 10 in FIG. 1, or combination thereof. A characteristic feature of the diagnostic system is that it comprises a wired connection, such as a field bus or a HART bus, to field devices 14, 15 and 16, and is able to control or configure the field devices, or to read measurement or status data from the field devices." **note: Thus, "the management system 10" is a diagnostic system 21 of Fig. 2 interfacing the Factory LAN" of Fig. 1.)** (Fig. 2, element 21's interface showing OLE and "data" going into element 23) Fi.2 ,element 23); a local network interface permitting data transfer between a local network and an intermediate network (please refer to col. 5, line 19-26, "With reference to FIG. 2, **a diagnostic system 21** may be any automation system, such as automation system 11 and 12 in FIG. 1, or any field device management or control system, such as the management system 10 in FIG. 1, or combination thereof." **Note: Fig. 1, element 10 which is element 21 of Fig. 2 is an "a local**

network interface" permitting data transfer from a local network "which is Fig. 2, element "Hart/Field bus and "field devices.");

a remote network interface device (Fig. 2, element 23) enabling data transfer between a remote network and the intermediate network (Fig. 2, element 24, 25, 26, col. 6, line 3-41); and

a equipment diagnostic monitor system for monitoring a health of a plurality of equipment within the local network, the equipment diagnostic monitoring system being located within the intermediate network, wherein the equipment diagnostic monitor system monitors at least one activity of at least one of the plurality of equipment in the local network; wherein the intermediate network is configured to selectively receive and selectively process data from the remote network depending on a set of predetermined criteria applied by the intermediate network and send a different data to the local network based on the selectively processed data and to transmit a second data from the intermediate network to the remote network where the second data is related to a predetermined condition of equipment identified by the equipment diagnostic monitor system(col. 6, line 63-col. 7, line 67, "FIG. 3 illustrates the wireless control arrangement according to the present invention when using the WAP. The diagnostic system 21, device database 22 as well as the WWW server 33 may be similar to those described with reference to FIG. 2. As the configuration and control commands will affect on the operation of the plant, a system according to the invention has to assure that the user is an authorized user. It may also be possible to create a WWW server 33 that includes the WAP gateway functionality 35, in order to facilitate end-to-end security solutions, or to achieve better access control or a guarantee of responsiveness. The WWW server 23 and 33 utilizes the data in the device database 22 for creating the interactive WWW pages for browsing the data and for control and configuration of

the field devices. As the server 23 or 33 uses the same database with the diagnostic system 21, the contents of the WWW pages are always up-to-date. The mobile terminal MT is able to browse the diagnostic and configuration data in the device database 22 by means of the interactive WWW pages. In response to the requests and selections made by the user in the interactive WWW pages the WWW server 23 makes inquiries to the device database 22, and a new WWW page is created according to the data obtained from the database 22. The created WWW page may include diagnostic data, status and an operation history data of the selected field device, as well as information required for controlling and configuring the field device. According to the user's selections an appropriate piece of data is shown in the WWW page in text format, graphical format and/or in any other suitable format, together with the fields or links for making further selections or commands. The server 23 or 33 translates the configuration or control commands made by the user in the interactive WWW page into configuration commands used in the interface between the WWW server 23 or 33 and the diagnostic system 21, typically based on the information obtained from the database 22. The interface between the server 23 and the diagnostic system 21 may be OLE (Object Linking and Embedding) The diagnostic system 21 forwards the control and configuration commands received from the server 23 or 33 to the field devices, typically upon translating the generic commands into the device specific instructions. As a result, an "on-line" connection from the mobile terminal MT to the field device is provided." col. 8, line 1-22, "By means of the inventive interactive user interface and the "on-line" connection, the maintenance personnel is able to retrieve information on the operation of a desired field device, such as a control valve, and display it on the user interface of the mobile terminal. The information may be displayed in a text format and/or graphical format.

The information may also include alarms and any operation parameters which the maintenance person wishes to monitor on-line, such as the opening of a valve. The operational data obtained by the mobile terminal MT allows the maintenance person to immediately make a decision on the maintenance need of the respective field device, i.e. whether it is possible to postpone the maintenance operation up to the next shut down of the plant or whether special arrangements are needed in order to avoid an unintentional shutdown. During the shutdown of the plant the mobile terminal can be used for performing various field test for the field device, such as a step response test or a hystheresis test for a control valve. Also during the operation of the plant the diagnostic system 21 may allow the mobile terminal to perform a forced control of the field device to a desired mode of operation or position.").

Pyotsia fails to teach "a plurality of equipment diagnostic monitor system.", however, one of ordinary skill in the art could have used more than one (plurality) of Pyotsia's "Diagnostics systems" to monitor the devices in various LAN network segments independently and the results of such an extension of Pyotsia's invention would have been predictable in that the devices located at different segments of the LANs could be independently remotely controlled and monitored.

Pyotsia fails to teach "wherein the remote network receives the second data without an IP address of the predetermined equipment associated with the second data being known to the remote network".

Reid teaches "A rewrite node is a point in an access rule where source or destination addresses are mapped to other source or destination addresses. Destination IP address rewrites allow an inbound connection through network address translation (NAT) address hiding to be

remapped to a destination inside the NAT barrier. Source address rewrites can be used on outbound connections to make the source appear to be one of many external addresses. This process allows the internal hosts to be aliased to external addresses. Rewrites can be based on any connection criteria, including users.", col. 6, lines 46-56. ("wherein the remote network receives the second data without an identity of the predetermined equipment associated with the second data being known to the remote network"

One of ordinary skill in the art could have substituted "WAP security of Pyotsia by known methods. For example, Pyotsia discloses security by WAP protocol and Reid discloses "Destination IP address rewrites allow an inbound connection through network address translation (NAT) address hiding to be remapped to a destination inside the NAT barrier" , and the results would have been a predictable use of known technique of providing security over the network . Thus, it would have been obvious to one of ordinary skill in the art to replace the WAP security with a network address translation (NAT)

It would have been obvious because it provides a method for controlling interactions between networks by the use of firewalls with defined regions as taught by Reid.

However, Pyotsia-Reid does not disclose the local network including at least one semiconductor processing tool and semiconductor processing tool monitoring equipment.

Kim discloses a local network comprising at least semiconductor processing tool and semiconductor processing tool monitoring equipment (fig. 1: equipment 20, 30, 40, fig. 2 step #s120, s160, col. 2 L5-42, col. 2 L60 to col. 3 L61: downloading warning message into the equipment to be displayed on the display device of the equipment).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Pyotsia-Reid in view of Kim in order to monitor the semiconductor devices and display a suggestion at the predetermined semiconductor device received from a user on the remote network.

One of ordinary skilled in the art would have been motivated because it would have monitored the network of semiconductor devices.

Referring to claim 12,

Pyotsia teaches the system of claim11, further comprising a security module located within the intermediate network, through which data transferred between the local network and the remote network passes (col. 7, line 22-34, "FIG. 3 illustrates the wireless control arrangement according to the present invention when using the WAP. The diagnostic system 21, device database 22 as well as the WWW server 33 may be similar to those described with reference to FIG. 2.", "A further advantage of the WAP is that it inherently provides a connection security between the MT and the WWW server 33. The security and the authentication of the user is especially important when the inventive arrangement is used for configuration and control of the field devices. As the configuration and control commands will affect on the operation of the plant, a system according to the invention has to assure that the user is an authorized user. It may also be possible to create a WWW server 33 that includes the WAP gateway functionality 35, in order to facilitate end-to-end security solutions, or to achieve better access control or a guarantee of responsiveness.")

Referring to claim 13,

Pyotsia teaches the system of claim 12, wherein data transfer between each of the networks occurs via an Internet Protocol (IP). (Fig. 2, elements 26, 24 25 and 23 are located in the internet environment.)

Referring to claim 14,

Keeping in mine the teachings of Pyotsia stated above, Pyotsia explicitly fails to teach the system of claim 13, wherein the module hides the IP addresses of the local network and the remote network from each other.

Reid teaches "A rewrite node is a point in an access rule where source or destination addresses are mapped to other source or destination addresses. Destination IP address rewrites allow an inbound connection through network address translation (NAT) address hiding to be remapped to a destination inside the NAT barrier. Source address rewrites can be used on outbound connections to make the source appear to be one of many external addresses. This process allows the internal hosts to be aliased to external addresses. Rewrites can be based on any connection criteria, including users.", col. 6, lines 46-56. (wherein the data transfer between each of the networks occurs via the Internet Protocol (IP), and wherein each network has its own unique IP address, and the system of claim 2, wherein the module hides the IP addresses of the remote network and the local network from each other.)

One of ordinary skill in the art could have substituted "WAP security of Pyotsia by known methods. For example, Pyotsia discloses security by WAP protocol and Reid discloses "Destination IP address rewrites allow an inbound connection through network address translation (NAT) address hiding to be remapped to a destination inside the NAT barrier", and the results would have been a predictable use of known technique of providing security over the

network . Thus, it would have been obvious to one of ordinary skill in the art to replace the WAP security with a network address translation (NAT)

It would have been obvious because it provides a method for controlling interactions between networks by the use of firewalls with defined regions as taught by Reid.

Referring to claim 15,

Pyotsia teaches the system of claim ii, wherein the equipment diagnostic monitor system collects and analyzes data from tests performed on the at least one item (col. 8, line 1-22, "By means of the inventive interactive user interface and the "on-line" connection, the maintenance personnel is able to retrieve information on the operation of a desired field device, such as a control valve, and display it on the user interface of the mobile terminal. The information may be displayed in a text format and/or graphical format. The information may also include alarms and any operation parameters which the maintenance person wishes to monitor on-line, such as the opening of a valve. The operational data obtained by the mobile terminal MT allows the maintenance person to immediately make a decision on the maintenance need of the respective field device, i.e. whether it is possible to postpone the maintenance operation up to the next shut down of the plant or whether special arrangements are needed in order to avoid an unintentional shutdown. During the shutdown of the plant the mobile terminal can be used for performing various field test for the field device, such as a step response test or a hystheresis test for a control valve. Also during the operation of the plant the diagnostic system 21 may allow the mobile terminal to perform a forced control of the field device to a desired mode of operation or position." Col. 5, line 27-53, "For this purpose, the diagnostic system 21 comprises a management and control software for the field devices. In the preferred embodiment each field

device type (e.g. two different control valves or control valves of different manufacturers may represent different device types) is provided with a specific control software which contains all necessary data and instructions sets for controlling, configuring, reading, etc., the field devices of a predetermined time. Normally these operations can be made by a control room personnel from a work station. A device database 22 stores information on each field device controlled by the diagnostic system 21 and, preferably, all diagnostics data read from the field devices. In other words, the database 22 contains an updated configuration of field devices as well as the operation history thereof. In accordance to the principles of the present invention, the diagnostic system 21 is further provided with an interactive user interface which utilize the configuration, control and management data in the database 22 and is accessible by the mobile terminal MT through a dedicated data connection established over the cellular communication system 26, in order to selectively control, configure or monitor the field devices 14, 15 and 16 connected to the diagnostic system 21. In the preferred embodiment of the invention the interactive user interface is embodied as one or more world wide web (WWW) pages in a WWW server 23.").

Referring to claim 16,

Pyotsia teaches the system of claim ii, wherein the equipment diagnostic monitor system is configured to execute or ignore a request by the user on the remote network based on the set of predetermined criteria, wherein the user requests that tests be performed on the at least one item, and that data from previous tests performed on the at least one item be uploaded (col. 5, line 40-42, "In other words, the database 22 contain an updated configuration of field devices as well as the operation history thereof.", col. 7, line 47-50, "The created WWW page may include diagnostic data, status and an operation history data of the selected field device, as well as

information required for controlling and configuring the field device.", col. 8, line 1-22, "By means of the inventive interactive user interface and the "on-line" connection, the maintenance personnel is able to retrieve information on the operation of a desired field device, such as a control valve, and display it on the user interface of the mobile terminal. The information may be displayed in a text format and/or graphical format. The information may also include alarms and any operation parameters which the maintenance person wishes to monitor on-line, such as the opening of a valve. The operational data obtained by the mobile terminal MT allows the maintenance person to immediately make a decision on the maintenance need of the respective field device, i.e. whether it is possible to postpone the maintenance operation up to the next shut down of the plant or whether special arrangements are needed in order to avoid an unintentional shutdown. During the shutdown of the plant the mobile terminal can be used for performing various field test for the field device, such as a step response test or a hystheresis test for a control valve. Also during the operation of the plant the diagnostic system 21 may allow the mobile terminal to perform a forced control of the field device to a desired mode of operation or position." Col. 5, line 27-53, "For this purpose, the diagnostic system 21 comprises a management and control software for the field devices. In the preferred embodiment each field device type (e.g. two different control valves or control valves of different manufacturers may represent different device types) is provided with a specific control software which contains all necessary data and instructions sets for controlling, configuring, reading, etc., the field devices of a predetermined time. Normally these operations can be made by a control room personnel from a work station. A device database 22 stores information on each field device controlled by the diagnostic system 21 and, preferably, all diagnostics data read from the field devices. In other

words, the database 22 contains an updated configuration of field devices as well as the operation history thereof. In accordance to the principles of the present invention, the diagnostic system 21 is further provided with an interactive user interface which utilize the configuration, control and management data in the database 22 and is accessible by the mobile terminal MT through a dedicated data connection established over the cellular communication system 26, in order to selectively control, configure or monitor the field devices 14, 15 and 16 connected to the diagnostic system 21. In the preferred embodiment of the invention the interactive user interface is embodied as one or more world wide web (WWW) pages in a WWW server 23.")

Referring to claim 17,

Pyotsia teaches the system of claim11, wherein the user on the remote network sends a suggestion regarding an operation of the at least one item being monitored to an entity managing the at least one item on the local network (col. 6, line 63-col. 7, line 67, "FIG. 3 illustrates the wireless control arrangement according to the present invention when using the WAP. The diagnostic system 21, device database 22 as well as the WWW server 33 may be similar to those described with reference to FIG. 2. As the configuration and control commands will affect on the operation of the plant, a system according to the invention has to assure that the user is an authorized user. It may also be possible to create a WWW server 33 that includes the WAP gateway functionality 35, in order to facilitate end-to-end security solutions, or to achieve better access control or a guarantee of responsiveness. The WWW server 23 and 33 utilizes the data in the device database 22 for creating the interactive WWW pages for browsing the data and for control and configuration of the field devices. As the server 23 or 33 uses the same database with the diagnostic system 21, the contents of the WWW pages are always up-to-date. The

mobile terminal MT is able to browse the diagnostic and configuration data in the device database 22 by means of the interactive WWW pages. In response to the requests and selections made by the user in the interactive WWW pages the WWW server 23 makes inquiries to the device database 22, and a new WWW page is created according to the data obtained from the database 22. The created WWW page may include diagnostic data, status and an operation history data of the selected field device, as well as information required for controlling and configuring the field device. According to the user's selections an appropriate piece of data is shown in the WWW page in text format, graphical format and/or in any other suitable format, together with the fields or links for making further selections or commands. The server 23 or 33 translates the configuration or control commands made by the user in the interactive WWW page into configuration commands used in the interface between the WWW server 23 or 33 and the diagnostic system 21, typically based on the information obtained from the database 22. The interface between the server 23 and the diagnostic system 21 may be OLE (Object Linking and Embedding) The diagnostic system 21 forwards the control and configuration commands received from the server 23 or 33 to the field devices, typically upon translating the generic commands into the device specific instructions. As a result, an "on-line" connection from the mobile terminal MT to the field device is provided.", col. 8, line 1-22, "By means of the inventive interactive user interface and the "on-line" connection, the maintenance personnel is able to retrieve information on the operation of a desired field device, such as a control valve, and display it on the user interface of the mobile terminal. The information may be displayed in a text format and/or graphical format. The information may also include alarms and any operation parameters which the maintenance person wishes to monitor on-line, such as the

opening of a valve. The operational data obtained by the mobile terminal MT allows the maintenance person to immediately make a decision on the maintenance need of the respective field device, i.e. whether it is possible to postpone the maintenance operation up to the next shut down of the plant or whether special arrangements are needed in order to avoid an unintentional shutdown. During the shutdown of the plant the mobile terminal can be used for performing various field test for the field device, such as a step response test or a hystheresis test for a control valve. Also during the operation of the plant the diagnostic system 21 may allow the mobile terminal to perform a forced control of the field device to a desired mode of operation or position.")

Referring to claim 18,

Pyotsia teaches the system of claim ii, wherein the equipment diagnostic monitor system sends an alert to a predetermined entity when an analysis of data received from the at least one item indicates that the at least one item is operating outside of a predetermined performance range (col. 8, line 1-22, "By means of the inventive interactive user interface and the "on-line" connection, the maintenance personnel is able to retrieve information on the operation of a desired field device, such as a control valve, and display it on the user interface of the mobile terminal. The information may be displayed in a text format and/or graphical format. The information may also include alarms and any operation parameters which the maintenance person wishes to monitor on-line, such as the opening of a valve. The operational data obtained by the mobile terminal MT allows the maintenance person to immediately make a decision on the maintenance need of the respective field device, i.e. whether it is possible to postpone the maintenance operation up to the next shut down of the plant or whether special arrangements are

needed in order to avoid an unintentional shutdown. During the shutdown of the plant the mobile terminal can be used for performing various field test for the field device, such as a step response test or a hystheresis test for a control valve. Also during the operation of the plant the diagnostic system 21 may allow the mobile terminal to perform a forced control of the field device to a desired mode of operation or position.")

Referring to claim 19,

Pyotsia teaches the system of claim ii further comprising a remote control proxy server in the intermediate network that is between the local network and the remote network that prevents direct IP routing of a device in the local network that is being accessed by the remote network (Fig. 2, element 23, col. 7, line 22-34, "FIG. 3 illustrates the wireless control arrangement according to the present invention when using the WAP. The diagnostic system 21, device database 22 as well as the WWW server 33 may be similar to those described with reference to FIG. 2.", "A further advantage of the WAP is that it inherently provides a connection security between the MT and the WWW server 33. The security and the authentication of the user is especially important when the inventive arrangement is used for configuration and control of the field devices. As the configuration and control commands will affect on the operation of the plant, a system according to the invention has to assure that the user is an authorized user. It may also be possible to create a WWW server 33 that includes the WAP gateway functionality 35, in order to facilitate end-to-end security solutions, or to achieve better access control or a guarantee of responsiveness.")

Referring to claim 20, Pyotsia-Reid-Kim discloses the system of claim 11 wherein the at least one of the plurality of semiconductor processing tools is couple dto the local network, the

user being able to access the at least one of the plurality of semiconductor processing tools via the remote network (Pyotsia: fig. 1, fig. 6; Kim: fig. 1).

Referring to claim 23, Pyotsia-Reid-Kim discloses the system of claim 11, wherein the equipment diagnostic monitor system effects access to the semiconductor tool by a remote user (Pyotsia: fig. 6; Kim: fig. 1).

Referring to claim 24,

Pyotsia teaches the data system for accessing remote equipment, comprising:

a first network interface device enabling data transfer between a local network (please refer to col. 5, line 19-26, "With reference to FIG. 2, **a diagnostic system 21** may be any automation system, such as automation system 11 and 12 in FIG. 1, or any field device management or control system, such as the management system 10 in FIG. 1, or combination thereof." **Note: Fig. 1, element 10 which is element 21 of Fig. 2 is an "a first network interface" permitting data transfer from a local network "which is Fig. 2, element "Hart/Field bus and "field devices.")** and an intermediate network (Fig. 1, element "Factory LAN" and including Fig. 2, elements 21 and 23 is "an intermediate network ", please refer to col. 5, line 19-26, "With reference to FIG. 2, **a diagnostic system 21** may be any automation system, such as automation system 11 and 12 in FIG. 1, or any field device management or control system, such as the management system 10 in FIG. 1, or combination thereof. A characteristic feature of the diagnostic system is that it comprises a wired connection, such as a field bus or a HART bus, to field devices 14, 15 and 16, and is able to control or configure the field devices, or to read measurement or status data from the field devices." **note: Thus, "the management system 10" is a diagnostic system 21 of Fig. 2 interfacing the Factory LAN" of Fig. 1.)** (Fig.

2, element 21's interface showing OLE and "data" going into element 23) Fig.2, element 23); a local network interface permitting data transfer between a local network and an intermediate network (please refer to col. 5, line 19-26, "With reference to FIG. 2, **a diagnostic system 21** may be any automation system, such as automation system 11 and 12 in FIG. 1, or any field device management or control system, such as the management system 10 in FIG. 1, or combination thereof." **Note: Fig. 1, element 10 which is element 21 of Fig. 2 is an "a local network interface" permitting data transfer from a local network "which is Fig. 2, element "Hart/Field bus and "field devices.");**

a second network interface device (Fig. 2, element 23) enabling data transfer between a remote network and the intermediate network (Fig. 2, element 24, 25, 26, col. 6, line 3-41); and

an equipment diagnostic monitor system configured to allow a user of the remote network to remotely control a diagnostic test performed on the equipment for monitoring a health of the equipment, the equipment being located in the local network, the equipment diagnostic monitoring system being located within the intermediate network, the equipment diagnostic monitoring system having at least a monitoring module, an analysis module, an alerts module and an active transfer module (col. 6, line 63-col. 7, line 67, "FIG. 3 illustrates the wireless control arrangement according to the present invention when using the WAP. The diagnostic system 21, device database 22 as well as the WWW server 33 may be similar to those described with reference to FIG. 2 It may also be possible to create a WWW server 33 that includes the WAP gateway functionality 35, in order to facilitate end-to-end security solutions, or to achieve better access control or a guarantee of responsiveness. The WWW server 23 and 33 utilizes the data in the device database 22 for creating the interactive WWW pages for browsing the data and

for control and configuration of the field devices. As the server 23 or 33 uses the same database with the diagnostic system 21, the contents of the WWW pages are always up-to-date. The mobile terminal MT is able to browse the diagnostic and configuration data in the device database 22 by means of the interactive WWW pages. In response to the requests and selections made by the user in the interactive WWW pages the WWW server 23 makes inquiries to the device database 22, and a new WWW page is created according to the data obtained from the database 22. The created WWW page may include diagnostic data, status and an operation history data of the selected field device, as well as information required for controlling and configuring the field device. According to the user's selections an appropriate piece of data is shown in the WWW page in text format, graphical format and/or in any other suitable format, together with the fields or links for making further selections or commands. The server 23 or 33 translates the configuration or control commands made by the user in the interactive WWW page into configuration commands used in the interface between the WWW server 23 or 33 and the diagnostic system 21, typically based on the information obtained from the database 22. The interface between the server 23 and the diagnostic system 21 may be OLE (Object Linking and Embedding) The diagnostic system 21 forwards the control and configuration commands received from the server 23 or 33 to the field devices, typically upon translating the generic commands into the device specific instructions. As a result, an "on-line" connection from the mobile terminal MT to the field device is provided.", col. 8, line 1-22, "By means of the inventive interactive user interface and the "on-line" connection, the maintenance personnel is able to retrieve information on the operation of a desired field device **(an active transfer module)**, such as a control valve, and display it on the user interface of the mobile terminal. The

information may be displayed in a text format and/or graphical format. The information may also include **alarms (alerts module)** and any operation parameters which the maintenance person wishes to monitor on-line, such as the opening of a valve. The operational data obtained by the mobile terminal MT allows the maintenance person to immediately make a decision on the maintenance need of the respective field device, i.e. whether it is possible to postpone the maintenance operation up to the next shut down of the plant or whether special arrangements are needed in order to avoid an unintentional shutdown. During the shutdown of the plant the mobile terminal can be used for performing various field test for the field device, such as a step response test or a hystheresis test for a control valve. Also during the operation of the plant the diagnostic system 21 may allow the mobile terminal to perform a forced control of the field device to a desired mode of operation or position." Col. 5, line 27-53, "For this purpose, the diagnostic system 21 comprises a management and control software for the field devices. In the preferred embodiment each field device type (e.g. two different control valves or control valves of different manufacturers may represent different device types) is provided with a specific control software which contains all necessary data and instructions sets for controlling, configuring, reading, etc., the field devices of a predetermined time **(Analysis module)**. Normally these operations can be made by a control room personnel from a work station. A device database 22 stores information on each field device controlled by the diagnostic system 21 and, preferably, all diagnostics data read from the field devices. In other words, the database 22 contains an updated configuration of field devices as well as the operation history thereof **(Monitoring module).** In accordance to the principles of the present invention, the diagnostic system 21 is further provided with an interactive user interface which utilize the configuration,

control and management data in the database 22 and is accessible by the mobile terminal MT through a dedicated data connection established over the cellular communication system 26, in order to selectively control, configure or monitor the field devices 14, 15 and 16 connected to the diagnostic system 21. In the preferred embodiment of the invention the interactive user interface is embodied as one or more world wide web (WWW) pages in a WWW server 23.")

wherein the equipment diagnostic monitor system is configured to monitor at least one activity performed on the equipment in the local network and the intermediate network is configured to receive and selectively process data from the remote network depending on a set of predetermined criteria applied by the intermediate network and send the processed data to the local network(col. 6, line 63-col. 7, line 67, "FIG. 3 illustrates the wireless control arrangement according to the present invention when using the WAP. The diagnostic system 21, device database 22 as well as the WWW server 33 may be similar to those described with reference to FIG. 2. It may also be possible to create a WWW server 33 that includes the WAP gateway functionality 35, in order to facilitate end-to-end security solutions, or to achieve better access control or a guarantee of responsiveness. The WWW server 23 and 33 utilizes the data in the device database 22 for creating the interactive WWW pages for browsing the data and for control and configuration of the field devices. As the server 23 or 33 uses the same database with the diagnostic system 21, the contents of the WWW pages are always up-to-date. The mobile terminal MT is able to browse the diagnostic and configuration data in the device database 22 by means of the interactive WWW pages. In response to the requests and selections made by the user in the interactive WWW pages the WWW server 23 makes inquiries to the device database 22, and a new WWW page is created according to the data obtained from the database 22. The

created WWW page may include diagnostic data, status and an operation history data of the selected field device, as well as information required for controlling and configuring the field device. According to the user's selections an appropriate piece of data is shown in the WWW page in text format, graphical format and/or in any other suitable format, together with the fields or links for making further selections or commands. The server 23 or 33 translates the configuration or control commands made by the user in the interactive WWW page into configuration commands used in the interface between the WWW server 23 or 33 and the diagnostic system 21, typically based on the information obtained from the database 22. The interface between the server 23 and the diagnostic system 21 may be OLE (Object Linking and Embedding) The diagnostic system 21 forwards the control and configuration commands received from the server 23 or 33 to the field devices, typically upon translating the generic commands into the device specific instructions. As a result, an "on-line" connection from the mobile terminal MT to the field device is provided.").

Pyotsia fails to teach "monitoring health of the predetermined semiconductor processing tools without an IP address of the processing tools".

Reid teaches "A rewrite node is a point in an access rule where source or destination addresses are mapped to other source or destination addresses. Destination IP address rewrites allow an inbound connection through network address translation (NAT) address hiding to be remapped to a destination inside the NAT barrier. Source address rewrites can be used on outbound connections to make the source appear to be one of many external addresses. This process allows the internal hosts to be aliased to external addresses. Rewrites can be based on any connection criteria, including users.", col. 6, lines 46-56. ("wherein the remote network

receives the second data without an identity of the predetermined equipment associated with the second data being known to the remote network".

One of ordinary skill in the art could have substituted "WAP security of Pyotsia by known methods. For example, Pyotsia discloses security by WAP protocol and Reid discloses "Destination IP address rewrites allow an inbound connection through network address translation (NAT) address hiding to be remapped to a destination inside the NAT barrier", and the results would have been a predictable use of known technique of providing security over the network. Thus, it would have been obvious to one of ordinary skill in the art to replace the WAP security with a network address translation (NAT) which hides the internal IP addresses.

It would have been obvious because it provides a method for controlling interactions between networks by the use of firewalls with defined regions as taught by Reid.

However, Pyotsia-Reid does not disclose the local network including at least one semiconductor processing tool and semiconductor processing tool monitoring equipment.

Kim discloses a local network comprising at least semiconductor processing tool and semiconductor processing tool monitoring equipment (fig. 1: equipment 20, 30, 40, fig. 2 step #s120, s160, col. 2 L5-42, col. 2 L60 to col. 3 L61: downloading warning message into the equipment to be displayed on the display device of the equipment).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Pyotsia-Reid in view of Kim in order to monitor the semiconductor devices and display a suggestion at the predetermined semiconductor device received from a user on the remote network.

One of ordinary skilled in the art would have been motivated because it would have monitored the network of semiconductor devices.

Referring to claim 25,

Pyotsia teaches the system of claim 24, further comprising a security module located within the intermediate network, through which data transferred between the local network and the remote network passes (col. 7, line 22-34, "FIG. 3 illustrates the wireless control arrangement according to the present invention when using the WAP. The diagnostic system 21, device database 22 as well as the WWW server 33 may be similar to those described with reference to FIG. 2.", "A further advantage of the WAP is that it inherently provides a connection security between the MT and the WWW server 33. The security and the authentication of the user is especially important when the inventive arrangement is used for configuration and control of the field devices. As the configuration and control commands will affect on the operation of the plant, a system according to the invention has to assure that the user is an authorized user. It may also be possible to create a WWW server 33 that includes the WAP gateway functionality 35, in order to facilitate end-to-end security solutions, or to achieve better access control or a guarantee of responsiveness.")

Referring to claim 26,

Pyotsia teaches the system of claim 25, wherein data transfer between each of the networks occurs via an Internet Protocol (IP) (Fig. 2, elements 26, 24 25 and 23 are located in the internet environment.)

Referring to claim 27,

Pyotsia fails to teach the system of claim 26, wherein the security module hides an IP addresses of the local network and the remote network from each other.

Reid teaches "A rewrite node is a point in an access rule where source or destination addresses are mapped to other source or destination addresses. Destination IP address rewrites allow an inbound connection through network address translation (NAT) address hiding to be remapped to a destination inside the NAT barrier. Source address rewrites can be used on outbound connections to make the source appear to be one of many external addresses. This process allows the internal hosts to be aliased to external addresses. Rewrites can be based on any connection criteria, including users.", col. 6, lines 46-56. (wherein the data transfer between each of the networks occurs via the Internet Protocol (IP), and wherein each network has its own unique IP address, and the system of claim 2, wherein the module hides the IP addresses of the remote network and the local network from each other.)

One of ordinary skill in the art could have substituted "WAP security of Pyotsia by known methods. For example, Pyotsia discloses security by WAP protocol and Reid discloses "Destination IP address rewrites allow an inbound connection through network address translation (NAT) address hiding to be remapped to a destination inside the NAT barrier" , and the results would have been a predictable use of known technique of providing security over the network . Thus, it would have been obvious to one of ordinary skill in the art to replace the WAP security with a network address translation (NAT)

It would have been obvious because it provides a method for controlling interactions between networks by the use of firewalls with defined regions as taught by Reid.

Referring to claim 28,

Pyotsia teaches the system of claim 24, wherein the equipment diagnostic monitor system is configured to collect and analyze data from at least one test performed on the equipment item (col. 8, line 1-22, "By means of the inventive interactive user interface and the "on-line" connection, the maintenance personnel is able to retrieve information on the operation of a desired field device, such as a control valve, and display it on the user interface of the mobile terminal. The information may be displayed in a text format and/or graphical format. The information may also include alarms and any operation parameters which the maintenance person wishes to monitor on-line, such as the opening of a valve. The operational data obtained by the mobile terminal MT allows the maintenance person to immediately make a decision on the maintenance need of the respective field device, i.e. whether it is possible to postpone the maintenance operation up to the next shut down of the plant or whether special arrangements are needed in order to avoid an unintentional shutdown. During the shutdown of the plant the mobile terminal can be used for performing various field test for the field device, such as a step response test or a hystheresis test for a control valve. Also during the operation of the plant the diagnostic system 21 may allow the mobile terminal to perform a forced control of the field device to a desired mode of operation or position." Col. 5, line 27-53, "For this purpose, the diagnostic system 21 comprises a management and control software for the field devices. In the preferred embodiment each field device type (e.g. two different control valves or control valves of different manufacturers may represent different device types) is provided with a specific control software which contains all necessary data and instructions sets for controlling, configuring, reading, etc., the field devices of a predetermined time. Normally these operations can be made by a control room personnel from a work station. A device database 22 stores

information on each field device controlled by the diagnostic system 21 and, preferably, all diagnostics data read from the field devices. In other words, the database 22 contains an updated configuration of field devices as well as the operation history thereof. In accordance to the principles of the present invention, the diagnostic system 21 is further provided with an interactive user interface which utilize the configuration, control and management data in the database 22 and is accessible by the mobile terminal MT through a dedicated data connection established over the cellular communication system 26, in order to selectively control, configure or monitor the field devices 14, 15 and 16 connected to the diagnostic system 21. In the preferred embodiment of the invention the interactive user interface is embodied as one or more world wide web (WWW) pages in a WWW server 23.")

Referring to claim 29,

Pyotsia teaches the system of claim 24, wherein the equipment diagnostic monitor system is configured to execute or ignore a request from the user on the remote network based on a set of predetermined criteria, wherein the user requests that tests be performed on the equipment, and that other data be uploaded from previous tests performed on the equipment(col. 5, line 40-42, "In other words, the database 22 contain an updated configuration of field devices as well as the operation history thereof.", col. 7, line 47-50, "The created WWW page may include diagnostic data, status and an operation history data of the selected field device, as well as information required for controlling and configuring the field device.", col. 8, line 1-22, "By means of the inventive interactive user interface and the "on-line" connection, the maintenance personnel is able to retrieve information on the operation of a desired field device, such as a control valve, and display it on the user interface of the mobile terminal. The information may

be displayed in a text format and/or graphical format. The information may also include alarms and any operation parameters which the maintenance person wishes to monitor on-line, such as the opening of a valve. The operational data obtained by the mobile terminal MT allows the maintenance person to immediately make a decision on the maintenance need of the respective field device, i.e. whether it is possible to postpone the maintenance operation up to the next shut down of the plant or whether special arrangements are needed in order to avoid an unintentional shutdown. During the shutdown of the plant the mobile terminal can be used for performing various field test for the field device, such as a step response test or a hystheresis test for a control valve. Also during the operation of the plant the diagnostic system 21 may allow the mobile terminal to perform a forced control of the field device to a desired mode of operation or position." Col. 5, line 27-53, "For this purpose, the diagnostic system 21 comprises a management and control software for the field devices. In the preferred embodiment each field device type (e.g. two different control valves or control valves of different manufacturers may represent different device types) is provided with a specific control software which contains all necessary data and instructions sets for controlling, configuring, reading, etc., the field devices of a predetermined time. Normally these operations can be made by a control room personnel from a work station. A device database 22 stores information on each field device controlled by the diagnostic system 21 and, preferably, all diagnostics data read from the field devices. In other words, the database 22 contains an updated configuration of field devices as well as the operation history thereof. In accordance to the principles of the present invention, the diagnostic system 21 is further provided with an interactive user interface which utilize the configuration, control and management data in the database 22 and is accessible by the mobile terminal MT through a

dedicated data connection established over the cellular communication system 26, in order to selectively control, configure or monitor the field devices 14, 15 and 16 connected to the diagnostic system 21. In the preferred embodiment of the invention the interactive user interface is embodied as one or more world wide web (WWW) pages in a WWW server 23.").

Referring to claim 31,

Pyotsia teaches the system of claim 24, wherein the equipment diagnostic monitor system is configured to send an alert to a predetermined entity when the analysis of the data indicates that the equipment is operating outside of a predetermined performance range col. 8, line 1-22, "By means of the inventive interactive user interface and the "on-line" connection, the maintenance personnel is able to retrieve information on the operation of a desired field device, such as a control valve, and display it on the user interface of the mobile terminal. The information may be displayed in a text format and/or graphical format. The information may also include alarms and any operation parameters which the maintenance person wishes to monitor on-line, such as the opening of a valve. The operational data obtained by the mobile terminal MT allows the maintenance person to immediately make a decision on the maintenance need of the respective field device, i.e. whether it is possible to postpone the maintenance operation up to the next shut down of the plant or whether special arrangements are needed in order to avoid an unintentional shutdown. During the shutdown of the plant the mobile terminal can be used for performing various field test for the field device, such as a step response test or a hystheresis test for a control valve. Also during the operation of the plant the diagnostic system 21 may allow the mobile terminal to perform a forced control of the field device to a desired mode of operation or position.").

Referring to claim 32,

Pyotsia teaches the system of claim 24, further comprising an interface proxy located in the intermediate network, the interface proxy being configured to permit data transfer between the equipment diagnostic system and the remote network (Fig. 2, element 23, col. 7, line 22-34, "FIG. 3 illustrates the wireless control arrangement according to the present invention when using the WAP. The diagnostic system 21, device database 22 as well as the WWW server 33 may be similar to those described with reference to FIG. 2.", "A further advantage of the WAP is that it inherently provides a connection security between the MT and the WWW server 33. The security and the authentication of the user is especially important when the inventive arrangement is used for configuration and control of the field devices. As the configuration and control commands will affect on the operation of the plant, a system according to the invention has to assure that the user is an authorized user. It may also be possible to create a WWW server 33 that includes the WAP gateway functionality 35, in order to facilitate end-to-end security solutions, or to achieve better access control or a guarantee of responsiveness.")

Referring to claim 33,

Pyotsia teaches the system of claim 1, wherein the intermediate network is configured to accept or reject information transmitted by the remote network depending on a set of predetermined criteria applied by the intermediate network(col. 7, line 22-34, "FIG. 3 illustrates the wireless control arrangement according to the present invention when using the WAP. The diagnostic system 21, device database 22 as well as the WWW server 33 may be similar to those described with reference to FIG. 2.", "A further advantage of the WAP is that it inherently provides a connection security between the MT and the WWW server 33. The security and the

authentication of the user is especially important when the inventive arrangement is used for configuration and control of the field devices. As the configuration and control commands will affect on the operation of the plant, a system according to the invention has to assure that the user is an authorized user. It may also be possible to create a WWW server 33 that includes the WAP gateway functionality 35, in order to facilitate end-to-end security solutions, or to achieve better access control or a guarantee of responsiveness.")

Referring to claim 34,

Pyotsia teaches the system of claim 6, wherein the data is selectively passed between the local network and the remote network depending on a set of predetermined criteria applied by the intermediate network (col. 7, line 22-34, "FIG. 3 illustrates the wireless control arrangement according to the present invention when using the WAP. The diagnostic system 21, device database 22 as well as the WWW server 33 may be similar to those described with reference to FIG. 2.", "A further advantage of the WAP is that it inherently provides a connection security between the MT and the WWW server 33. The security and the authentication of the user is especially important when the inventive arrangement is used for configuration and control of the field devices. As the configuration and control commands will affect on the operation of the plant, a system according to the invention has to assure that the user is an authorized user. It may also be possible to create a WWW server 33 that includes the WAP gateway functionality 35, in order to facilitate end-to-end security solutions, or to achieve better access control or a guarantee of responsiveness.")

Referring to claim 35,

Pyotsia-Reaid-Kim teaches the system of claim 1 wherein, the intermediate network comprises an equipment diagnostic monitoring system configured to monitor and analyze the at least one semiconductor processing tool and having at least a monitoring module, an analysis module, an alerts module and an active transfer module col. 6, line 63-col. 7, line 67, "FIG. 3 illustrates the wireless control arrangement according to the present invention when using the WAP. The diagnostic system 21, device database 22 as well as the WWW server 33 may be similar to those described with reference to FIG. 2. It may also be possible to create a WWW server 33 that includes the WAP gateway functionality 35, in order to facilitate end-to-end security solutions, or to achieve better access control or a guarantee of responsiveness. The WWW server 23 and 33 utilizes the data in the device database 22 for creating the interactive WWW pages for browsing the data and for control and configuration of the field devices. As the server 23 or 33 uses the same database with the diagnostic system 21, the contents of the WWW pages are always up-to-date. The mobile terminal MT is able to browse the diagnostic and configuration data in the device database 22 by means of the interactive WWW pages. In response to the requests and selections made by the user in the interactive WWW pages the WWW server 23 makes inquiries to the device database 22, and a new WWW page is created according to the data obtained from the database 22. The created WWW page may include diagnostic data, status and an operation history data of the selected field device, as well as information required for controlling and configuring the field device. According to the user's selections an appropriate piece of data is shown in the WWW page in text format, graphical format and/or in any other suitable format, together with the fields or links for making further selections or commands. The server 23 or 33 translates the configuration or control commands

made by the user in the interactive WWW page into configuration commands used in the interface between the WWW server 23 or 33 and the diagnostic system 21, typically based on the information obtained from the database 22. The interface between the server 23 and the diagnostic system 21 may be OLE (Object Linking and Embedding) The diagnostic system 21 forwards the control and configuration commands received from the server 23 or 33 to the field devices, typically upon translating the generic commands into the device specific instructions. As a result, an "on-line" connection from the mobile terminal MT to the field device is provided.", col. 8, line 1-22, "By means of the inventive interactive user interface and the "on-line" connection, the maintenance personnel is able to retrieve information on the operation of a desired field device **(an active transfer module)**, such as a control valve, and display it on the user interface of the mobile terminal. The information may be displayed in a text format and/or graphical format. The information may also include **alarms (alerts module)** and any operation parameters which the maintenance person wishes to monitor on-line, such as the opening of a valve. The operational data obtained by the mobile terminal MT allows the maintenance person to immediately make a decision on the maintenance need of the respective field device, i.e. whether it is possible to postpone the maintenance operation up to the next shut down of the plant or whether special arrangements are needed in order to avoid an unintentional shutdown. During the shutdown of the plant the mobile terminal can be used for performing various field test for the field device, such as a step response test or a hystheresis test for a control valve. Also during the operation of the plant the diagnostic system 21 may allow the mobile terminal to perform a forced control of the field device to a desired mode of operation or position." Col. 5, line 27-53, "For this purpose, the diagnostic system 21 comprises a management and control

software for the field devices. In the preferred embodiment each field device type (e.g. two different control valves or control valves of different manufacturers may represent different device types) is provided with a specific control software which contains all necessary data and instructions sets for controlling, configuring, reading, etc., the field devices of a predetermined time **(Analysis module)**. Normally these operations can be made by a control room personnel from a work station. A device database 22 stores information on each field device controlled by the diagnostic system 21 and, preferably, all diagnostics data read from the field devices. In other words, the database 22 contains an updated configuration of field devices as well as the operation history thereof **(Monitoring module).** In accordance to the principles of the present invention, the diagnostic system 21 is further provided with an interactive user interface which utilize the configuration, control and management data in the database 22 and is accessible by the mobile terminal MT through a dedicated data connection established over the cellular communication system 26, in order to selectively control, configure or monitor the field devices 14, 15 and 16 connected to the diagnostic system 21. In the preferred embodiment of the invention the interactive user interface is embodied as one or more world wide web (WWW) pages in a WWW server 23.")

2. Claim 22 is rejected under 35 U.S.C. 103(a) as being Pyotsia et al. (hereinafter Pyotsia, US 7,010,294 B1) in view of Reid et al. (hereinafter Reid, US 6,182,226 B1) in view of Kim et al. (hereinafter Kim, US 6,314,385 B1) and further in view of Crist et al. (hereinafter Crist, US 6,182, 226 B1)

Referring to claims 22,

Keeping in my mind the teachings of Pyotsia as stated above, Pyotsia fails to teach the limitations of claims 22.

Crist teaches the system of claim further comprising a semiconductor tool coupled to the local network, a user being able to access the semiconductor tool via the remote network, wherein the equipment diagnostic monitor system controls tests performed by software within the semiconductor tool, saves data from the tests and sends out alerts to a remote user via the remote network when the semiconductor tool is operating outside a predetermined performance range. (col.4, line15-21, col. 6, line 1-3, col. 6, line 57 through col. 7, line 17).

It would have been obvious to apply the system of Pyotsia to the testing of a semiconductor tool coupled to the local network, as the application promises the predictable results as sated by Pyotsia at col. 6, line 63-col. 7, line 67, "FIG. 3 illustrates the wireless control arrangement according to the present invention when using the WAP. The diagnostic system 21, device database 22 as well as the WWW server 33 may be similar to those described with reference to FIG. 2. It may also be possible to create a WWW server 33 that includes the WAP gateway functionality 35, in order to facilitate end-to-end security solutions, or to achieve better access control or a guarantee of responsiveness. The WWW server 23 and 33 utilizes the data in the device database 22 for creating the interactive WWW pages for browsing the data and for control and configuration of the field devices. As the server 23 or 33 uses the same database with the diagnostic system 21, the contents of the WWW pages are always up-to-date. The mobile terminal MT is able to browse the diagnostic and configuration data in the device database 22 by means of the interactive WWW pages. In response to the requests and selections made by the user in the interactive WWW pages the WWW server 23 makes inquiries to the

device database 22, and a new WWW page is created according to the data obtained from the database 22. The created WWW page may include diagnostic data, status and an operation history data of the selected field device, as well as information required for controlling and configuring the field device. According to the user's selections an appropriate piece of data is shown in the WWW page in text format, graphical format and/or in any other suitable format, together with the fields or links for making further selections or commands. The server 23 or 33 translates the configuration or control commands made by the user in the interactive WWW page into configuration commands used in the interface between the WWW server 23 or 33 and the diagnostic system 21, typically based on the information obtained from the database 22. The interface between the server 23 and the diagnostic system 21 may be OLE (Object Linking and Embedding) The diagnostic system 21 forwards the control and configuration commands received from the server 23 or 33 to the field devices, typically upon translating the generic commands into the device specific instructions. As a result, an "on-line" connection from the mobile terminal MT to the field device is provided.", col. 8, line 1-22, "By means of the inventive interactive user interface and the "on-line" connection, the maintenance personnel is able to retrieve information on the operation of a desired field device **(an active transfer module)**, such as a control valve, and display it on the user interface of the mobile terminal. The information may be displayed in a text format and/or graphical format. The information may also include **alarms (alerts module)** and any operation parameters which the maintenance person wishes to monitor on-line, such as the opening of a valve. The operational data obtained by the mobile terminal MT allows the maintenance person to immediately make a decision on the maintenance need of the respective field device, i.e. whether it is possible to postpone the

maintenance operation up to the next shut down of the plant or whether special arrangements are needed in order to avoid an unintentional shutdown. During the shutdown of the plant the mobile terminal can be used for performing various field test for the field device, such as a step response test or a hystheresis test for a control valve. Also during the operation of the plant the diagnostic system 21 may allow the mobile terminal to perform a forced control of the field device to a desired mode of operation or position." Col. 5, line 27-53, "For this purpose, the diagnostic system 21 comprises a management and control software for the field devices. In the preferred embodiment each field device type (e.g. two different control valves or control valves of different manufacturers may represent different device types) is provided with a specific control software which contains all necessary data and instructions sets for controlling, configuring, reading, etc., the field devices of a predetermined time **(Analysis module)**. Normally these operations can be made by a control room personnel from a work station. A device database 22 stores information on each field device controlled by the diagnostic system 21 and, preferably, all diagnostics data read from the field devices. In other words, the database 22 contains an updated configuration of field devices as well as the operation history thereof **(Monitoring module).** In accordance to the principles of the present invention, the diagnostic system 21 is further provided with an interactive user interface which utilize the configuration, control and management data in the database 22 and is accessible by the mobile terminal MT through a dedicated data connection established over the cellular communication system 26, in order to selectively control, configure or monitor the field devices 14, 15 and 16 connected to the diagnostic system 21. In the preferred embodiment of the invention the interactive user interface is embodied as one or more world wide web (WWW) pages in a WWW server 23."

Conclusion

Examiner's note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. lt is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAMAL B. DIVECHA whose telephone number is (571)272-5863. The examiner can normally be reached on IFP (M-F: 10-6.30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN FOLLANSBEE can be reached on 571-272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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